DOCUMENT RESUME

ED 284 996 CE 048 028

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TITLE Memphis-Defense Logistics Agency Reading Improvement Program. Report No. 87-2.
INSTITUTION Memphis Literacy Coalition, TN.; Naval Technical Training Command, Millington, Tenn. Research Branch.
PUB DATE Jun 87
NOTE 19p.; For a related document, see CE 048 027.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Adult Basic Education; Adult Reading Programs; *Adult Students; Instructional Materials; *Literacy Education; *Outcomes of Education; *Program Effectiveness; *Reading Improvement; *Reading Instruction; Teaching Methods
IDENTIFIERS Navy; *Project Literacy U S

ABSTRACT

A reading immersion program was conducted for 23 Memphis Defense Logistics Agency employees using the Navy Reading Improvement Program. Participants ranged in age from 30-71 and in schooling from 7 years of formal education to some college. Pretesting with the Gates-MacGinitie Reading Tests yielded scores ranging from 3.0 to 7.4 with a mean reading grade level of 4.9. Four experienced teachers were hired for the program. Participants were taught for full days for two weeks (10 days), in four instructional groups based on test scores. The program used a diagnostic-prescriptive approach to reading instruction. Instructional methods included individual assisted reading and silent reading, phonics analysis, small group oral reading, and completion of practice exercises. A variety of materials were used. Standardized instruments, questionnaires, and information sheets were used to evaluate the program. Some of the findings were as follows: (1) mean reading scores for the participants increased by 1.9 grade levels; (2) participants indicated a positive attitude toward education; (3) motivation to learn was improved when family and friends were involved in the reading program; (4) the literacy consciousness developed by some learners transferred from the classroom to the home and the workplace; (5) the teachers established an instructional climate that was conducive to learning; (6) adult learners must feel some input to the content/method of their learning; (7) diagnostic tests and years of formal schooling are not a good indicator of reading skill; and (8) the immersion reading program stimulated many to continue their learning. The study concluded that a reading immersion program can raise the reading level of adults and that it is appropriate for the workplace. (KC)

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Memphis - Defense Logistics Agency Reading Improvement Program

REPORT NO 87-2

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MEMPHIS - DEFENSE LOGISTICS AGENCY

Reading Improvement Program

prepared for

Memphis Literacy Coalition (M-Plus)

and

Naval Technical Training Command
Naval Air Station Memphis
Millington, TN 38054-5056

by

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June, 1987

ACKNOWLEDGMENTS

The writers wish to express sincere appreciation to the following individuals who provided support for this project:

ADULT BASIC EDUCATION PERSONNEL

Minnie Anderson
Doris Carter
Elizabeth Chappell
Pat Coffey
Joe Eoff
Martha Holt
Ernest Johnson
Cecile Prager
Emily Travis
Iola Vaught

DEFENSE LOGISTICS AGENCY

Colonel James Johnston
Helen Bowman and staff

MEMPHIS LITERACY COUNCIL

Gay Johnston

More importantly, sincere appreciation is acknowledged to the employees of the Defense Logistics Agency - our students.

INTRODUCTION

American business, industry, and government leaders have finally realized that productivity is centered on the quality of the people who do the work. Improving that quality at all levels is a challenge. Specific problems must be identified, solutions must be recommended, and a commitment to excellence must be made individually and collectively. David Kearnes, Chief Executive Officer of Xerox Corporation recently stated:

> The basic skills of our entry-level workers are simply not good enough to give us the kind of work force we need to compete in a fiercely competitive global market. This is no less than a survival issue for America.(1)

Illiteracy and aliteracy are definite factors in American low productivity and are a threat to the well-being of this country.

On December 10, 1985, Capital Cities/American Broadcasting Companies (ABC) and the Public Broadcasting Service (PBS) announced a joint service project, Project Literacy U.S. (PLUS). Key goals were to mobilize and organize community resources to deal with illiteracy locally and to raise local and national awareness of the widespread illiteracy problem.

A local task force or literacy coalition was established through the initiatives of the Memphis, Tennessee, ABC affiliate, WHBQ-TV. This coalition, Memphis-Project Literacy U.S. (M-PLUS) under the direction of Chairman, Rear Admiral David L. Harlow, is seeking new ways to expand existing literacy delivery systems to reach greater numbers of adults.

Knowing the Navy had been conducting, since 1978, a successful remedial reading program for its young recruits, Admiral Harlow posed the following question:

> Could the concepts of the Navy's Academic Remedial Training (ART) program of intensive reading training be modified for application to adults from the community and if so, would the results be similar when compared to the results obtained from the young Navy recruits?

Navy recruits are administered a standardized reading test on their first processing day. If a recruit scores at 6.0 reading grade level or below, he is assigned to ART for reading remediation. At the beginning of the ART program, the student's specific areas of reading deficiencies are diagnosed, skill prescriptions are prepared, and instruction begins in individual and group settings using commercial reading materials which are based on a phonetic approach. Navy-specific vocabulary and reading passages are also included. The student is immersed in reading activities for a minimum of 6 hours a day for an average of 17 days. Studies of the ART program indicate Navy students increase reading grade level an average of 2.7 years.

Two of the characteristics which seem to make this program work so well are the immersion concept (6 hours a day for several weeks) and the incorporation of job-relevant reading materials.

With the endorsement of M-PLUS, a pilot test of this immersion reading concept was conducted in February 1987 at Naval Air Station Memphis, City of Memphis employees who scored below 6.0 on a reading test were given by their employer ten days' release time, transportation, and meals to attend a reading improvement class taught by volunteer Navy personnel and one civilian volunteer. The reading grade level (RGL) gains did duplicate those found in the Navy program. One group, whose pretest scores ranged between 2.5 and 4.5, evidenced an average 3.3 gain in RGL.

Enthusiastic with those results, the M-PLUS coalition endorsed a second pilot test of the reading immersion concept to begin in May 1987. This program was to be conducted on the premises of a business, industry, or government agency using the most current adult education reading materials and was to be taught by local Adult Education professionals, assisted by volunteer Navy personnel from the first pilot.

The Commanding Officer of the Defense Logistics Agency (commonly referred to as the Defense Depot) volunteered to assist M-PLUS with the second pilot project. This project meshed with initiatives he had recently established to improve employee morale/skills and ultimately increase productivity.

Fifty-eight Defense Depot employees volunteered for the reading program and were administered the Gates-MacGinitie Reading Test. Twenty-five individuals were identified as reading between 3.0 and 7.5 RGL; subsequently, they became the target population for the second reading immersion program.

PROGRAM DESCRIPTION

The reading immersion program was conducted during the two week period of May 4-15, 1987, on site at the Defense Depot. The following sections address participant selection, instructor selection and staffing, training delivery, instructional methodology and materials, and evaluation.

1. Participant Selection

Administrators from the Defense Depot Training Unit and personnel from the Chief of Naval Technical Training administered the Gates-MacGinitie Reading Tests to fifty-eight volunteers from the employees of the Defense Depot. The initial pool of potential participants was taken from Defense Depot personnel records by selecting those individuals who had not completed high school. However, when the letters were sent to the individuals and to the supervisors of the Defense Depot departments inviting them to participate in the program, others came forth seeking to improve their reading skills and desiring to participate in the immersion program. The results of the testing indicated that twenty-three of the fifty-eight met the previously described criteria for participation in the program.

The demographic characteristics of the learners were:

1. The educational level ranged from 7.0 years of formal schooling to some college.

2. The age range was 30 - 71 years with a mean of 45 years.

3. Fifteen of the participants were males and eight were female.

4. Pretesting with the Gates-MacGinitie Reading Tests yielded scores ranging from 3.0 - 7.4 with a mean Reading Grade Level (RGL) of 4.9 for the group.

2. Instructor Selection and Staffing

Four instructors were selected for the program by the Memphis City Schools Adult Basic Education Program, Defense Depot personnel and Chief of Naval Technical Training (CNTECHTRA) personnel. The instructors had extensive experience in teaching both children and adults. Two of the instructors were retired teachers; one had taught at the high school level and one had taught at the elementary school level. One instructor was trained in the Laubach Literacy Method of teaching adults, and one instructor had experience teaching English as a Second Language (ESL).

The four instructors were paid by the Adult Basic Education program and were released from their regular assignments to conduct this trial of the immersion concept. All instructors were female.

Administrative and Curriculum Development support was provided by Navy personnel, Memphis City School Adult Education Department personnel, and Defense Depot personnel.

3. Training Delivery

Instruction was conducted from 0800 until 1145 with one break in the morning. The afternoon session was conducted from 1245 until 1530 (3:30) with one break. The length of the instruction period consisted of 6 1/2 hours daily for a period of 10 days.

Four instructional groups were formed based on reading grade level scores. Classroom facilities consisted of a large training room which could be used for large group instruction and could be divided to serve three smaller groups. A second classroom was smaller and could accommodate only a single group at any given time. These facilities were well-lighted and contained portable chalkboards. The close proximity of restroom facilities, dining facilities, and refreshment machines contributed to a more comfortable and productive school day.

4. Instructional Methodology and Materials

The program was a diagnostic, prescriptive approach to reading instruction. Several weeks prior to instruction each learner was administered the comprehension section of the Gates-MacGinitie Reading Tests, Level D, Form 1, to determine entry reading level.(7)

Individuals were grouped for instruction based on the pretest scores. The groups were organized at the following grade levels: 3.0 - 4.1, 4.2 - 5.3, 5.6 - 6.4, and other. The group size ranged from five to six people. Groups were established prior to class convening in order to select appropriate materials and to focus instruction. It should be noted that the instructional level of an individual begins slightly lower than the tested level in order to permit the individual to demonstrate success immediately.

Within each group, individuals were allowed to proceed at their own rate. Some moved rapidly to more difficult materials while others moved more slowly (requiring more time to build self-confidence). Group sessions were conducted using various reading books plus job and community-related materials such as newspapers, maps, forms, charts, and graphs. These group sessions focused on developing writing, interpersonal relations, analytical, and communication skills as well as reading. Harman succinctly described in Illiteracy: A National Dilemma what the teachers were trying to accomplish when he stated:

> An appropriate educational program is one that caters to a specific group of participants, deriving its content and methods from the group's needs. Such a program would seek to address topics that are meaningful and desirable for its participants and would focus on helping them to realize the objectives they have set for themselves.(3)

Improved writing, improved ability to understand their reading, and improved communication of ideas were all stated goals of the participants.

Instructional methods consisted of Individual Assisted Reading and Silent Reading, Phonics Analysis, Small Group Oral Reading, and Completion of Practice Exercises. Assisted reading allowed the reader to understand how the process worked by increasing his confidence as the teacher assisted in the pronunciation of words.

Silent reading coupled with completion of practice exercises permitted the learner to check his understanding and mastery of what was being read. The teacher also used the practice exercise to monitor the progress of the learner and to use them to prescribe other readings. Oral reading promoted confidence because the learner could hear the progress that he was making.

Phonics was minimally used in this program because most of the learners had the necessary skills to divide and pronounce words. However, the phonics conditions were applied periodically to remind the learner that he was to use all of his skills to attack a problem area.

The practice exercises were used to promote writing, to stimulate discussion among group members and to provide feedback to the instructor. Each member of the group was asked to explain "why" he answered in a certain way and was asked to relate the "why" to previous learnings.

The materials used in this program consisted of:

Title	Publisher
Reading Skills For Adults	Steck Vaughn Company
Map Skills For Today	Weekly Reader Series
Read on the Job: PAL Life Competency Program	Xerox Corporation
Reading For Today	Steck Vaughn Company
Famous Black Americans	Steck Vaughn Company
English Lessons For Adults	Harcourt Brace Jovanovich
Modern Reading Skill Text Series	Charles E. Merrill
GED Scorebooster 2	Steck Vaughn Company

5. Evaluation

Standardized instruments, questionnaires, and information sheets were used to gather data about the program and its participants. The Gates-MacGinitie Reading Test, Level D, Form 1, was the standardized instrument used to measure reading grade level. The comprehension section of this test was administered. It consisted of forty-three items using a multiple choice pattern for responses. The respondent chose the best answer from the four choices. The instrument has a reliability co-efficient of .88 to .94 for alternate forms using the Kuder-Richardson Formula 20. Validity measures for the test were established for both younger and older adults using inferential and literal reading passages suitable for the interests of both groups.(7)

The Attitude Toward Education Questionnaire, developed by Jones and Petry, was modified and administered to measure the perceived effects of the program based on six factors considered to be essential for a quality lifestyle.(4) The six factors included in the questionnaire were: self-expression, self-concept, family life, leisure, relationships with others, and life in general. The instrument was developed in 1980 using concepts taken from the adult education literature that relate to the lifestyle factors. Validity of the instrument was determined using the judgments of experts familiar with the literature, and reliability was determined using a Spearman-Brown Split Half technique. Reliability was determined to be .78. The modified version consists of sixteen items scored on a Likert-type response scale which ranged from strongly agree to strongly disagree. Individual scores ranged from a maximum of 80 to a minimum of 16.

FINDINGS

These findings were determined from observations made by the experienced adult education teachers during the instructional process and the administration of the instruments.

1. Mean reading scores for the participants increased by 1.9 grade levels.

The results of the testing with the Gates-MacGinitie Reading Tests are provided in Table 1. Mean pretest score was at the 4.9 RGL and posttest score was at the 6.8 RGL indicating an overall increase of 1.9. Individual scores varied; nineteen of the participants increased their reading scores from pretest to posttest, while four of the participants did not. Individual scores ranged from a -1.1 RGL deficit to a +6.7 RGL increase.

An examination of Table 1 shows that two individuals made tremendous, almost astonishing, gains in RGL (+6.1 and +6.7), while four others made no progress or decreased in reading grade level. Harman may have provided a partial explanation when he said that many adults are aliterates. These individuals have the skills to read; however, they cease to use them creating a degeneration of skills. However, when subjected to additional usage or given a need, these reading skills return quickly and often to levels exceeding previously learned ones.

On the other hand, Harman believes that readiness to read and need to read are very important factors affecting student progress. The learners who did not progress were older students who often discussed what they were planning when they retired in the near future. For th[illegible]. it appeared that the motivation or need to read was not of sufficient magnitude to affect their classroom performance. They went through the motions of reading, but they did not seem to internalize the lessons as did those who were younger and who had more ambitious personal goals. Learners learn in response to their felt needs and perceptions, not those of their instructors. Adult learners require a readiness to change something in their lives before they can achieve maximum benefit from instruction.

2. Participants indicated a positive attitude toward education.

The results of the Attitude Toward Education Questionnaire are shown in Table 2. The maximum mean score that can be obtained is 5.0 on each category. Mean scores range from 3.88 to 4.59.

A mean score of 4.51 for self-expression indicated that the participants felt that the program helped them talk more easily with others, helped them express their ideas on paper, and helped them express their ideas orally. It should be noted that each teacher spent some time each day conducting simple writing exercises and helping the individuals organize their thoughts prior to the writing. Apparently, this was viewed as most beneficial by the participants.

A mean score of 4.59 reflects a positive feeling by the participants about education. The instructional process focused on completing reading tasks, sharing ideas, and discussing the value of reading. These processes were translated into a more positive attitude toward education as measured by the questionnaire.

Two items focused on the extent to which the participants felt that the class helped them with family relationships. Although the mean score of 3.88 is positive, it was rated lowest of the questionnaire variables. Classroom instruction did not focus directly on developing family relationships; however, we were hopeful that sharing ideas, listening to the concerns of others, attacking problems with an open mind, and improving reading skills would be transferred to family relations.

Developing more confidence about their future goals and gaining insight about life were perceived to be of value to the participants. They rated these attributes of life-in-general with a mean score of 4.56 which was the highest rating of any of the subtests.

Learning to read with improved skill apparently stimulated the learners to read a wider variety of materials and to spend some leisure time reading. The activities using the newspaper and the community materials were focused to improve variety as well as stimulate interest in reading.

Relationships with others as described by being open to the lifestyle of others, working with others, and being more open to the opinion of others were rated at 4.40. This positive score reinforces the need for adult education programs to include small group discussions and other instructional strategies that will enable the learner to share his thoughts with his classmates and teachers.

3. Motivation to learn was increased when family and friends were involved in the reading program.

The learners were told early in the instructional program that there would be a reception on the last day and that they could invite family and friends to attend. Each day as the learners gained more and more confidence and saw their reading improvement, they began discussing "who and how many" they would invite to the reception. "Graduation day" was full of excitement as grown children, close friends, and spouses provided the learners with wide grins, hearty handshakes, hugs, and encouragement for their bravery and for their obvious success.

Mothers and fathers, husbands and wives glowed as they sought out their teachers to meet their special guests. Younger learners wished that their school-age children could have attended the reading program. Obviously, "graduation day" was a high point in each participant's life and served as reinforcement and motivation for the importance of including families and friends in the attainment of personal goals.

4. The literacy consciousness developed by some learners transferred from the classroom to the home and the workplace.

In order to help transfer the literacy consciousness to others, some homework was required of the learners each day. Taking home books and doing homework were testimonials to fellow employees, friends, and family about the value of learning, about the commitment to learning, and the attainment of short-term goals.

Children and adults tend to be more influenced by what they see rather than what they are told. One learner, a young mother with several young children, exclaimed the pride and curiosity displayed by her fifteen year old son as she discussed what she had learned "in school" that day; she smiled warmly as she also told of being better able to help her fifth grader with his homework.

Some of the supervisors would telephone their employees in the evening to discuss what was going on in the program. These telephone calls were a source of pride for the learners. They spoke of admiration of these supervisors who encouraged them to "learn all you can learn while you are there."

The enthusiasm for the program spread throughout the depot. Before the first week of classes was concluded, other employees were calling to volunteer for another project. Within a month more than 50 additional employees were tested for a follow-on class. Apparently, the success of the first participants had eroded the fear and hesitancy of others. They now realized management support was authentic and not punitive.

5. The teachers of adults established an instructional climate that was conducive to learning.

Several conditions existed that contributed to a warm instructional climate. The teachers acted as facilitators for learning. They asked questions; they accepted learner ideas. The teachers listened with patience while the learners expressed their ideas. They asked questions which caused the learners to rethink, rephrase, and respond in a clearer manner. The environment was secure and supportive; help was provided on call and empathy eased learners' fears and anxieties.

A second condition that contributed to the development of a warm, instructional climate was that the teachers taught sitting down at tables with their learners. This gave the learner a feeling that the teacher was very sincere and caring. It also provided the teacher a better opportunity to read facial expressions (responding to puzzled looks or excitement reflected in the learners' eyes).

It should be noted that it is very difficult for an inexperienced teacher to create and maintain a warm, conducive instructional climate because learning to identify and interpret the non-verbal cues of learners is very difficult and only comes with time and experience. In fact, adult learners are most difficult to read in terms of non-verbal cues due to their years of experience hiding their deficiencies behind a mask of little expression.

6. Adult learners must feel some input to the content/ method of their learning.

Throughout the instructional day the participants were questioned as to which materials they enjoyed reading and in what areas they would like to have more practice. Having a wide variety of materials at increasing difficulty readily available from the Adult Basic Education program allowed the instructors to keep high student interest, personalize the learning for each individual, and keep the learning purposeful. Evaluation periods were held at the end of each day to summarize skills mastered and plan the next day's activities. Teachers listened to learner concerns, and collectively, they made recommendations for the next learning session. Consequently, an adult who is actively involved in the learning process and in the planning of learning activities is usually satisfied with the result.

Daily evaluation periods also allowed the teacher to praise good work, maximize learning, and create espirit de corps. All of these are easy to accomplish in small groups which have similar abilities and skills.

7. The instructional materials were designed especially for adults.

The instructional materials provided by Memphis City Schools were the latest, most up-to-date adult education materials available. They took into account the age, sex, occupation, hobbies, as well as the reading levels of adults. No one book or set of materials addressed each of these characteristics, but the total set of materials covered them all. This wide variety of materials permitted the instructor to tailor instruction to the interests as well as to the needs of each learner.

8. Diagnostic testing may not give an accurate assessment of reading skills.

A few project participants were origirally classified as non-readers, but upon further assessment, it became known that these older participants could read but had experienced test anxiety and lacked test-taking skills. Completing the tiny "bubbles" on the standardized answer sheet was a totally new experience for some, while others found the coding difficult to see. The time limit to complete the test also caused some to panic; while others, out of past failure, gave up quite easily - not participating was less painful than being found deficient. One solution to these problems may be a mini-lesson on test-taking strategies including practice on "bubbling-in" on standardized tests. Test administrators must be very slow, precise, and clear when giving directions to adults.

9. Years of formal schooling are not a good indicator of reading skill.

Nine of the participants indicated they had graduated from high school; however, all of these scored below the 7th grade reading level. Since employers are interested in certificates, diplomas, and degrees on the front end of employment, they may not realize that missing skills or eroded skills surface only when the people are on the job and are expected to perform. Sadly enough, many employers do not recognize the interrelationships among job performance, feelings of adequacy and self-worth, and reading skills. Therefore, business, industry, and government must seek avenues to develop a totally functional employee and look at current skills vice years of initial schooling.

10. An adult's literacy awareness influences his children's and grandchildren's interest and success in school.

The participants in this reading program expressed the fact that they had begun to feel comfortable reviewing their children's schoolwork. They could now speak the same language as their children's teachers - main idea, syllables, vocabulary, inferences, etc. Many related how they had become more interested in the books and materials brought home by their children. In turn, the children became interested in their parents'/grandparents' learning and learning materials. The impact of this literacy awareness cannot be easily measured, but

the 42 school-age children in the homes of these learners were surely affected in some positive way. Applebee challenges policy makers to consider:

> The literacy practices of the home have a profound influence on children's achievement. There is an intergenerational effect on literacy; programs that are successful in improving the performance levels of adults will have payoffs in the achievement of their children.(1).

Furthermore, educational policy makers must recognize that:

> Parents are their children's first and most influential teachers. What parents do to help their children learn is more important to academic success than how well-off the family is.(9).

Ignoring these basic facts while planning adult educational experiences will perpetuate a cycle of educational failure for both adults and children.

11. The immersion reading program stimulated many to continue their learning.

Many learners signed up to begin an adult education program and continue their learning. The program is offered on-site beginning 30 minutes after completion of the workday. Several were excited that this class would teach the mathematics and language skills needed to pass the GED test. The learners who had a high school diploma hoped to attend this class to raise their basic skills high enough to enter one of the local two-year colleges. The motivation to complete the short-term goals of this reading class stimulated latent, long-term goals.

CONCLUSIONS AND RECOMMENDATIONS

The major conclusion about the reading project conducted at the Defense Depot is that reading grade level of adult learners can be increased rapidly using the immersion concept. Secondarily, it must be concluded that an immersion concept for reading improvement will work in and is an appropriate instructional strategy for the workplace.

Lessons learned from the immersion concept conducted at the Defense Depot suggest the following recommendations:

a. Instructors must be selected using experience, expertise, and interest as criteria. Adult learners succeed in the capable hands of professional adult educators.

b. Instructional materials for adults must be current, relevant, and state of the art. This enables the teacher to tailor the lessons to both skills and interests of the learners.

c. An instructional climate must be established where "literacy becomes a value for the learner." With good teachers, support from the workplace and the home, and appropriate materials, adult learners begin to realize that learning is important and that improved reading skills have a most beneficial impact on the quality of their lives. Only then will adults make themselves available for learning. The National Commission on Excellence in Education stated that "learning is the indispensable investment required for success in the information age we are entering."(8)

Finally, we challenge the employer, as well as the employee, to begin the "search for excellence" and the community to fully support this search, for surely, we are "A Nation At Risk."

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TABLE 1

PRETEST-POSTTEST RESULTS ON READING GRADE LEVEL
USING GATES-MACGINITIE READING TESTS

Pretest Score	Posttest Score	Gain Score
4.5	7.3	+2.8
3.8	5.8	+2.0
3.4	3.4	0.0
6.1	8.0	+1.9
6.4	12.5	+6.1
5.1	6.7	+1.6
3.4	4.3	+0.9
5.1	5.6	+0.5
5.8	9.7	+3.9
5.3	6.4	+1.1
4.1	5.6	+1.5
5.8	12.5	+6.7
5.0	8.5	+3.5
5.4	8.1	+2.7
3.0	4.7	+1.7
3.4	5.1	+1.7
5.7	6.3	+0.6
4.3	4.1	-0.2
7.4	8.1	+0.7
5.6	5.3	-0.3
3.4	4.4	+1.0
4.2	8.0	+3.8
6.4	5.3	-1.1

Mean Pretest Score = 4.9

Mean Posttest Score = 6.8

Mean Gain Score = 1.9

TABLE 2

ATTITUDE TOWARD EDUCATION QUESTIONNAIRE

N = 23

Category	Mean Score
Self-expression	4.51
Education	4.59
Family Life	3.88
Life-in-general	4.65
Leisure	4.43
Relationships with Others	4.40